

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ulrich Bonne et al. Confirmation No.: 7422
Serial No.: 10/727,834 Examiner: Neil Turk
Filing Date: December 4, 2003 Group Art: 1743
For: COMPACT OPTO-FLUIDIC CHEMICAL SENSOR
Docket No.: H0004834-1100.1205101

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Lynn Thompson September 18, 2007

Date

Applicants submit that the Examiner's rejections contain at least the following clear errors and/or omissions of one or more essential elements needed for a *prima facie* rejection.

Claims 1, 3-9, 38, 40-46, and 50 are rejected as being unpatentable over Fein (US 6,016,372) in view of Klainer (US 4,846,548). The Examiner acknowledges that Fein fails to teach a second light source with a second wavelength, but asserts that it would have been obvious to one of ordinary skill in the art to modify Fein to include a second light source of a second wavelength as taught by Klainer in order to provide for enhanced sensitivity in detection of the chemical specie. Applicants submit the references are combined in error.

Fein appears to teach a waveguide sensor in which sensitivity is enhanced by maximizing the surface area of the waveguide and adjusting the internal volume of the housing and size of the gas discharge opening. See column 11, lines 42-51. Fein also teaches enhancing sensitivity by increasing the ambient pressure. See column 12, lines 25-41. Fein thus appears to teach a waveguide with enhanced sensitivity. Klainer appears to teach a fiber optic sensor in which a solid core is clad with a reactive material. Klainer teaches "The clad can be attached to the core by either vapor deposition, plating or coating, or by any other known technique." See column 4, lines 43-45. Fein, however, teach a waveguide having a liquid core in which "Sensitivity is

enhanced by controlling the pressure differential across the waveguide wall and/or by shaping the waveguide to enlarge the surface area." See abstract. Applicants submit that there is no motivation for one of ordinary skill in the art to modify the teachings of Fein with those of Klainer. Fein specifically describes the disadvantages of solid core optical fiber sensors, which appears to be the type of fiber optic sensor taught by Klainer. See column 1, line 33 through column 2, line 62. In particular, Fein teaches, "employment of an immobilized reagent, while attractive in theory, generally results in a sensor with a severely limited life expectancy due to reagent loss from photodecomposition or leaching." See column 2, lines 32-35. Fein appears to be teaching away from any combination with a solid core device, such as that taught by Klainer. Applicants submit that one of ordinary skill in the art, upon reading Fein's description of the disadvantages of the sensors of the type disclosed by Klainer, would have no motivation to combine the teachings of Klainer with Fein. Further, Klainer's only teaching regarding the use of multiple wavelengths appears to be the generic statement that, "Multiple wavelength sources may be used to enhance sensitivity" with respect to a sensor for water involving a sensor having a cobaltous chloride coating on a suitable core. Klainer does not appear to provide any actual teaching of a sensor having multiple wavelength sources, and does not appear to provide any indication of how such a sensor would achieve enhanced sensitivity. Applicants submit that based on this generic proposal of Klainer, one of ordinary skill in the art would not have been motivated to modify the Fein device to include multiple wavelength sources.

MPEP 2143.01 states:

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

MPEP 2143.01 III states:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)... Although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'

916 F.2d at 682, 16 USPQ2d at 1432.)."

It appears that the Examiner is asserting that one of ordinary skill in the art could have combined the teachings of Fein and Klainer based on the level of skill in the art. Applicants submit that this is not a proper ground for combining references for an obviousness rejection.

The Examiner asserts that the teaching of Klainer to provide multiple wavelength sources for the purpose of enhancing sensitivity would have been an obvious modification to the Fein device as another means for enhancing the sensitivity in detecting the chemical specie.

Applicants respectfully disagree. As discussed above, Klainer does not appear to actually teach a sensor having multiple wavelength sources. Further, there is no teaching, suggestion, or motivation for one of ordinary skill in the art to modify the liquid core sensor of Fein with the solid core sensor of Klainer, especially in view of Fein's teachings of the disadvantages of solid core sensors. Additionally, even if one were to attempt to combine the teachings of Fein and Klainer, it is unclear how such a combination would be achieved.

In the Advisory Action mailed August 23, 2007, the Examiner asserts that the modification is not exchanging the different cores of Fein and Klainer, but is a modification to provide enhanced sensitivity in optical waveguides. Applicants submit that in light of the generic statement in Klainer that "multiple wavelength sources may be used to enhance sensitivity", without any further discussion or guidance, would appear to suggest that such enhanced sensitivity is directed to the solid core fiber optic sensors specifically disclosed by Klainer. There is nothing in Klainer to suggest that the "enhanced sensitivity" would be expected to be achieved in any type of optical sensor, as appears to be suggested by the Examiner.

Appl. No. 10/727,834
Reply to Office action dated June 18, 2007

Applicants submit that for at least the reasons set forth above, the Examiner has not provided adequate reasoning, motivation, or suggestion for combining the teachings of Fein and Klainer, thus the rejection appears to be in error.

Claim 49 is rejected as being unpatentable over Fein in view of Klainer and further in view of Wong (US 5,444,249). For at least the reasons set forth above, there is no motivation for one of ordinary skill in the art to combine the teachings of Fein and Klainer. Wong does not provide what Fein and Klainer lack. Thus, the rejection of claim 49 appears also to be in error.

Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims are now in condition for allowance. If a telephone interview would be of assistance, please contact the undersigned attorney at 612-677-9050.

Respectfully submitted,

Dated: 09-18-07



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